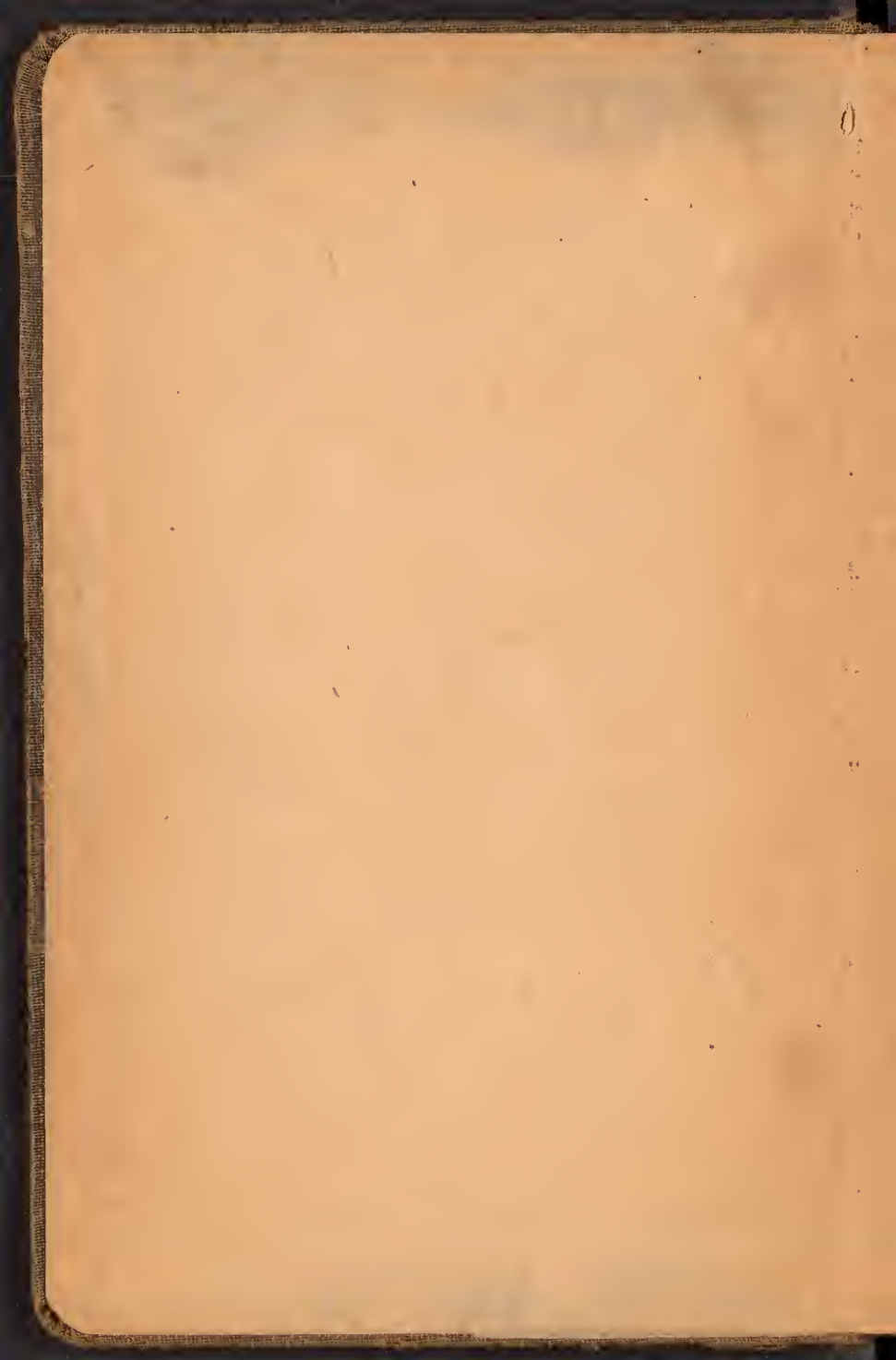
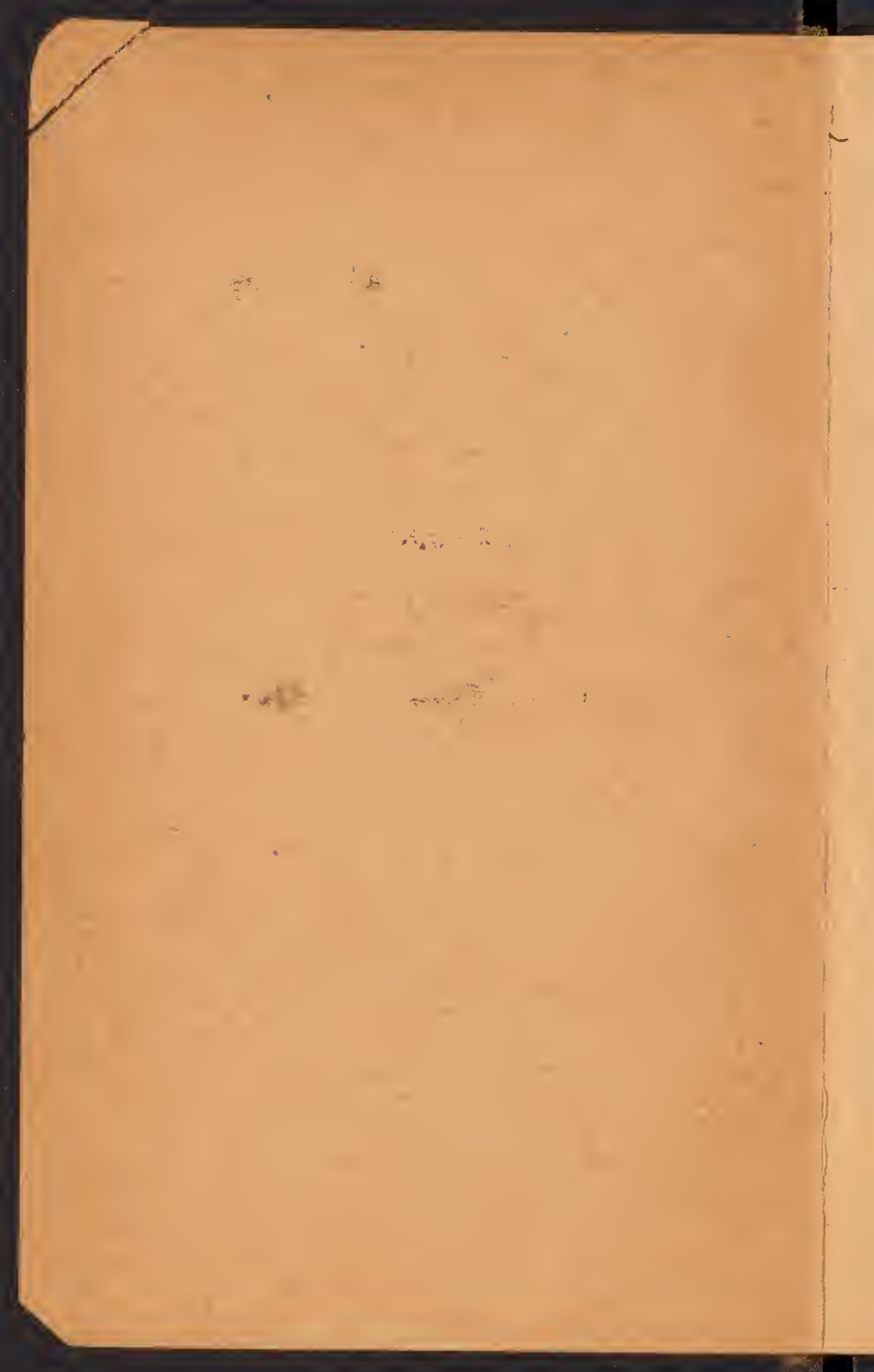


Record







1²

Scientific Journal of a Trip to
Costa Rica

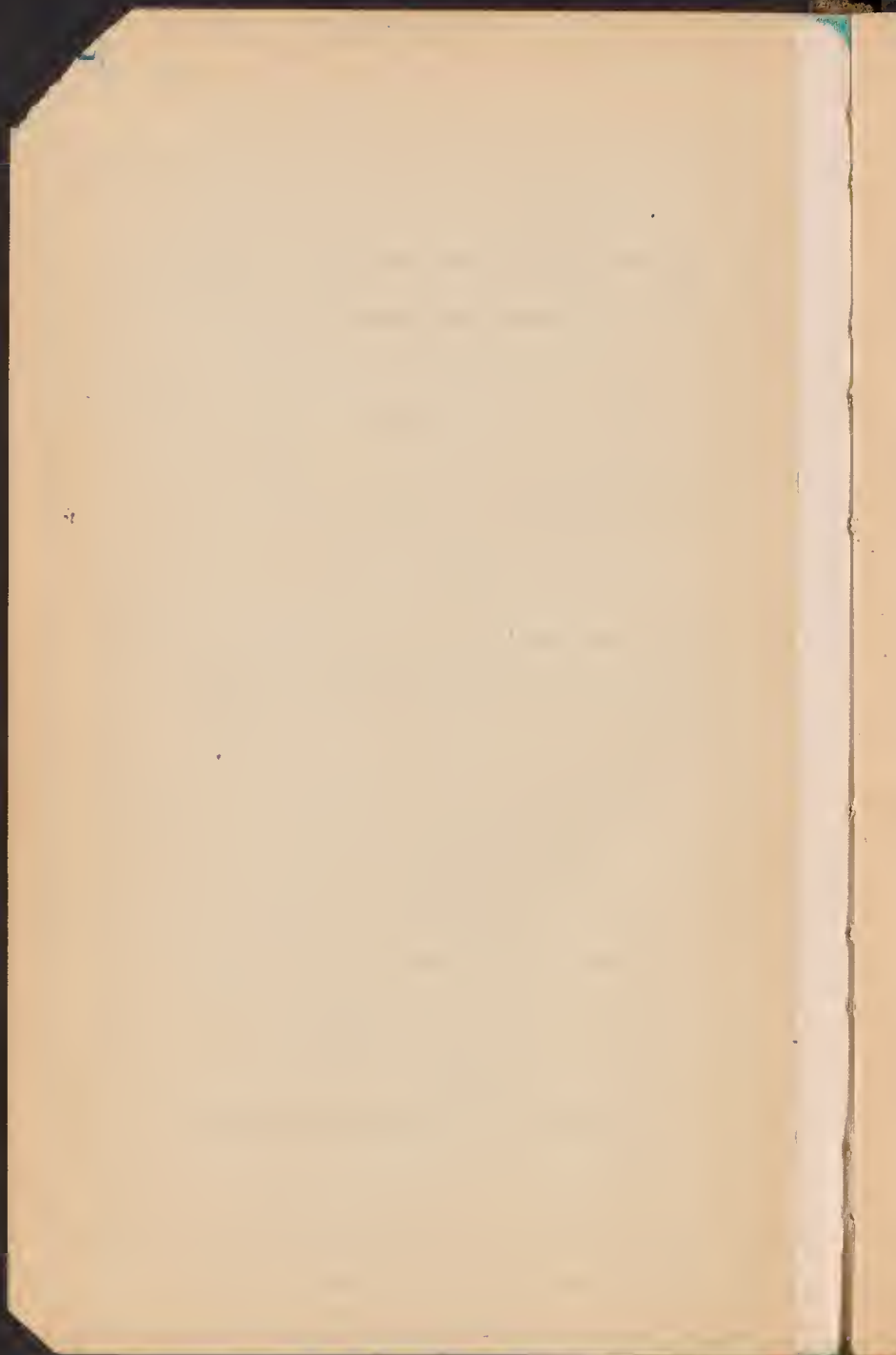
in 1929-30

by

Carroll William Dodge

Volume One

August 24 to April 19



Aug 24 Sailed from New York and arrived in
 Simon Sept 5, 1929.

Sept 6-22 In San José, getting family
 settled, presenting letters of introduction
 meeting Thomas at the boat. etc. Short trips
 to Parque Bolívar and one to La Sabana
 exploring road from San José Golf Club to
 Rio Maria Aguilar and the rest road west
 south.

Sept 23 Took morning train to Turrialba and
 motor to Pejivalle Farm where we arrived in
 time for lunch. Railroad ends at office and
 beneficio shortly after passing up gorge past
 mouth of Rio Gato. The dwellings are a little
 further up Rio Pejivalle at higher elevation about
 650 m.

After usual shower collected in potrero
 back of village behind the beneficio to altitude
 of 750 m. 2 good sedge smuts in quantity.

Sept. 24 In forenoon west up right bank
 of Rio Cacao following tramline to end and
 then up a slightly cleared foot trail to about
 780 m where trail becomes indistinct Most

collections between end of tramline and end of trail except grass smut and two *Melioske* also a few flowering plants with flowers conspicuous at this season. Many fungi found only as single individuals, most lichens above reach. A large white gelatinous fungus with merulioid hymenium was preserved in alcohol, also a small *Collybia* or *mycena*. Rio Cacao is the first tributary of Rio Pejivalle above confluence with Rio Gato and contains a pipe line to supply water to the beneficio.

Sept 25 Followed valley of Rio Pejivalle to end of tramline at the next tributary Rio Humo above Rio Cacao. Just beyond and above this point Rio Humo divides into three more or less equal branches of which we ascended the middle one along a banana trail. We wound up thru the jungle on the northern bank then crossed it and followed the southern ~~banana~~ bank to the upper ~~branch~~ banana plantation,

which has only recently been cleared, reaching about 800 m. More fungi but very few lichens also miscellaneous insects.

Sept. 26. Took Taqui Taqui tram line to end (south bank of Rio Pejivalle) then took a faint trail which finally descends to the river and follows the bank along the river bed at low water upriver for some distance. The faint trail then leaves the river at a large boulder where farther progress along the bed is impossible and ascends the hill at the corner where the river bends sharply south east. We nearly reached the top but at 820 m. we turned back owing to the lateness of the hour. Typical rain forest, fairly open going much of the way.

Sept. 27 Inspected coffee plantation, looked over and photographed cochinita infestation also spent time photographing various stages of a disease with symptoms something

like the Chasparria disease but not caused by *Cercospora*. Went on down the track into the gorge of the Rio Pajivalle where the slides occur. Here we got several collections of lichens from a recently felled tree. Went back to the farm house overhauled presses, dried driers and ventilators in the sun. Weather sunny all day, very unusual at this time of year.

Should plan another trip to explore Elgato and its tributaries.

Sept. 28. Collected some diseased specimens of coffee in the morning returned to Turrialba on the 8³⁰ train thence to San José. Worked over collections

Sept. 30 Spent the day going over diseased coffee material see Notebook on coffee diseases)

Oct, 1, 3 worked at Wercflé's collections of lichens in the Museo Nacional

Oct. 2 worked at collections at home
 while Bertha visited in Santiago de
 Cartago to arrange for our visit later
 Oct 4, 5 worked in Botanical Laboratory
 of Escuela Nacional de Agricultura
 on coffee diseases and visited the
 experimental plots. Oct 4. Thomas collected
 about the school and Oct 5 about the Sabana

October 6. Thomas not feeling well. I went to
 Alajuela on the morning train where I was
 met by Juvenal Valerio who took me to his
 home where I met his younger brother. We took
 the (usual muddy) cart road to Desamparados
 de Alajuela
 varying in altitude from 920-980 m.

Part of the way the road follows the Rio
 Ciruela where some of our best collecting
 occurred. We returned by the same route
 to an elaborate Costa Rican lunch.

Chicken soup with rice & much fat

Fried chicken garnished with green peas - Rice

Roast loin of pork with potato chips

Omelette with green peas

Black beans + rice

Native macaroni and tomato sauce

Oranges

Coffee

White wine.

After lunch chatted with Valeris until train time. Various fungi and lichens painted a new *Hypholoma*. Found abundant *Pleurotus*. Introduced to guayaba fruit.

Oct. 7. Took care of yesterdays specimens wrote letters and prepared to go to Santiago

Oct 8. Took 7 AM train for Santiago de Cartago, were met by don Ricardo Chavarria Flores and escorted to the farm house about 20 m above the station or 1160 m. The forenoon was divided between coffee + banana finca just below the house belonging to Carlos Piedras and the potrero of don Ricardo - After the

midday rain during which I cared for the morning's collections, I retraced my steps collecting bark lichens. At 5 PM barometer registered 1180 m ~~in~~ hill in potrero east of house.

Oct 9. Went down across bananal + RR tracks + circled potrero at 1100 m, where most of lichens were collected, then down across don Ricardo's bananal nearly to Rio Birris at 920 m. Collected most of insects at lower altitude. Returned for lunch.

Oct 10. Indigestion all day. Bertha + Anne accompanied Mr + Mrs Chavarria to don Carlos Piedra's home, thence to the trapiche on the west river terrace of the Rio Birris at about 1300 m. Bertha collected some miscellaneous lichens + fungi, which I cared for that night.

Oct 11. Left the house about 8 AM by horseback and joined don Carlitos Piedra + his sister

Mary for a trip to their lechería Coliblanco
 After crossing Rio Birris we climbed the
 east terrace thru a rich fog belt to
 the table land striking a road leading
 directly into Capelladas in a northerly
 direction. Here we made a right angled
 turn to the east thru the main street
 (the turn west leads thru _____ and
 Cervantes to Cartago) Continuing eastward
 we passed thru Santa Teresa de Capelladas
 then three rivers, The last ^{two} near a sawmill
 just beyond and north of the sawmill
 we entered the lower potreros of Coliblanco
 at about 1600 m we crossed the potrero in
 a northerly direction and started a steep
 zigzag climb to the farmhouse + sheds
 at 1980 m. on what I judge to be the southern
 slope of Turrialba. We lunched almost
 as soon as we arrived. Then I botanized
 for about two hours on fallen mossy logs
 and tree trunks near and just below the
 farm house. We were between 5 and 6 hours

in the saddle and reached the Chavarria Finca at dusk. No rain but heavy mists most of the time about 1600 m.

Oct 12 Stephen (Thomas) arrived this morning and put up porch evening collections of insects ^(Oct 9, 10) while I put up plants of Oct 11. Bright red *Hygrophoms*. ~~##~~ *Cora pavonia* in large areas often 1 sq meter covered recently denuded areas along roadside very rarely among mosses on rocks or trees. After specimens cared for went up road toward Piedras sanas.

Oct 13 Rested overhauled presses and took pictures. Identified some lichens

Oct 14 Spent the day on potrero below Angelina siding in swamp and among Indian graves next the bananal. Mr Chavarria had two peons open one grave. A few fragments of a rather crude unornamented pottery were found.

The ladies & Mr Chavarria joined us with lunch which we ate in the shade of the guayabos near the opened grave. The sight of the ladies as they rode up the path in the bananal on their prancing mounts contrasted strongly with the phlegmatic surefooted patience of don Ricardo's mule. The lunch was ample with abundance of fruit and chocolate milk in tall wine bottles. The shiny ^{green} leaved guayabos with their smooth bark and the ~~the~~ tomentose gray leaved melastomes with their bark covered with gray crustose lichens and trunks & limbs hung with large masses of *Tillandsia usneoides*, *Usnea longissima*? [one plant over 2 m. long. gave a picturesque tropical setting suitable for the hand of a great tapestry designer. The trim feminine riding costumes and Mrs C's straight bobbed hair would

seem to belong to a tall and graceful
 page rather than to the ~~the~~ elaborate
 coiffures and ample skirts of the grand
 dame of the manor. The juxtaposition
 of a picnic party and the open grave
 would make a striking contrast. The
 peons were dark skinned Spanish-Indian
 crosses, with their machetes bare feet
 sombreros and smiling faces would contrast
 strongly with the slender feminine Nordic
 page who was too interested in the operations to
 eat. "Alas! poor Yorick" with variations.

Oct 15. Crossed Bananal back of RR
 station descended along a very sharp
 ridge running at nearly ~~right angle~~
 right angle to Rio Reventazon when
 at about 1000 m turned west and descended
 into canon of Reventazon to about 950 m
 when we were forced to return on
 account of lateness of hour, full vascula

and empty stomachs. Spent afternoon in caring for specimens. Got a raceme of *Alluvia deoro* nearly 2 meters long.

Oct 16, Rode to farm of Dr. Carlos Piedra where ^{we} left our horses. We crossed R. Biris and botanized the side hill between the river and the highway to Capelladas keeping along private road used by Piedras in going to Capelladas. Most of the area covered seems to be in a fog belt because all trees heavily clothed with bryophytes and lichens. Lichens very well developed and many fruiting. 1220-1340m.

Oct 17. Retraced route of October 11, tying our horses and eating lunch at foot of steep zigzag trail about 1620m. It began to rain but we botanized for two hours up zigzag trail toward Colillancas farm house ^{to 1910m} then returned arriving about 5 PM. A number of interesting

collections mostly phaenogams + lichens. The rain made the road very slippery coming back and two sudden showers added to our discomfort.

Oct 18 Spent the forenoon in changing driers, putting up yesterday's collections. Very hard rain all the afternoon studied some of lichen collections.

Oct 19 Returned to San José, got mail and answered letters

Oct 20 Church in morning, sermon on the cow as a symbol of St. Luke. Transmutation of grass to milk [Trendianism]

In afternoon attended children's party at Iglesias'. Met widow of Presidente Rodriguez ae 75 and widow Presidente Iglesias grandmother + mother of don Bernardo Iglesias.

Oct 21. Business details in morning
afternoon identified specimens as far
as available literature permitted.

Oct 22-23 Continued work at speci-
mens.

Oct 24 Worked at Museo Nacional

Oct 25 Took morning train at 7 AM
for Tres Rios followed road beside
plaza east past south side of church
and took road leading up valley in
La Carpintera 30 E of S. Followed this
road to about 1500? m when rain and
lateness of hour forced our return.

Bertha went with us Returned ^{at 1:15 PM} and
spent rest of day in care of specimens
Found lola and other unusual things.

Oct 26 Worked at specimens purchased
saddlebags for 38¢ and took the 5 P M
train for Alajuela

Oct 27. Started north from Alajuela at 7 AM went north past Itzquis to San Isidro de Alajuela turning right just above school followed cartroad to the Alajuela reservoir and then had lunch there. Began to rain on the return and was soaked to the skin. Many interesting finds. Highest elevation 1300 m wood pile 980 m.

Oct 28-29 Worked at specimens all day. Oct 29 sent baggage to Iglesias' farm on north west slope of Irazu.

Don Bernardo Iglesias y senora dined with us in evening.

Oct 30. Took the 8 PM train to Alajuela and visited schools. We were met by Don Julio Solera the principal who showed us the beautiful building with patio swimming pool and gymnasium. Everything except chemical laboratory adequately equipped and \$12,000 worth of equipment ordered for that from

Germany. Next we visited the hospital the cleanest I have ever seen. The equipment appeared adequate to my inexperienced eye. We returned and visited Valerio's second year class on Marchantia for which I cut sections.

We were tendered a luncheon by the faculty prepared by the seniors (Class V) in home economics.

Hors d'oeuvres, salad, arroz con pollo, frijoles blancos and dulces, with fruit juice and coffee.

After lunch we went to visit the primary schools. Equipment was adequate and apparently more Teachers per pupil. The Escuela Republica de Guatemala was especially fine. The quetzal, bandera and bibliotheca presented by the Rep. de Guatemala were displayed also the orthophonic phonograph

purchased by the proceeds of products from the school garden cultivated by the boys. Bertha was presented with a ^{large} bouquet of violets. We returned to the Instituto just as it was beginning to rain.

We visited Valerio's other class then were treated to a basket ball game between varsity and scrubs. We occupied seats as guests of honor and I opened the game with the first toss. The game was exciting and fast but only one fellow knocked out for the rest of the quarter. Sportsmanship was very good. Following the game the players jumped into the swimming pool and did fancy stunts as they cooled off.

Then we were honored by a special school ball which lasted until we were forced to leave in the 4 PM bus.

The school system seems very good entering at seven for six primary grades, then five years at the Instituto covering our secondary curriculum and one or perhaps two years of college. Isn't this about the same as the underlying idea of our hiatus at the end of the freshman year and aren't the students better off for the extra year in prep.

Students spend 8 hrs per diem in school and 2-3 hrs at home in study. Discipline is strict aided by compulsory wearing of school uniform [white coat ^{brass buttons} and military cap and dark blue or black trousers, girls white middie navy blue ties and pleated short skirts] except Saturday p.m. and Sundays. Students forbidden to visit saloons billiard rooms or casas de tolerancia and to smoke. Violation followed by prompt expulsion. Stature much smaller than students of similar age in US but look healthy & happy.

Puberty apparently late.

System has overemphasis on examinations and too rigid. All students must pass all subjects. Under such conditions memory usually developed at expense of intellect. Corps of teachers young sympathetic and enthusiastic, some at least well trained, principal has had at least 3 years experience teaching in University of Kansas before returning to Costa Rica.

Students mostly go on to schools in ^{Pharmacy or Law School, Agricultural} Europe or US or enter business. Girls go to normal school to Law School or are married. Ages range 19-25.

Alajuela is cattle + sugar market of country, citizens all middle class no poverty, stricken or very rich.

Population is growing a little faster than school buildings + equipment but situation is not yet acute.

Oct 31, 1929. I intended to return to La Carpintera but missed the train. Took street by station south to end, 1 block north, thru potreros then south coming out on Calle 17 + road to Desamparados which I we followed to Desamparados. Then we started southwest hoping to reach some of the wooded ravines of Escasu. We passed two small villages and tried to reach a white church with two towers across the river + above us. Missed road and after wandering thru lanes potreros and cafetales kept the general direction north to northwest thru lanes finally reaching Alajuelita before finding a road. Took ~~main~~ road in from Alajuela arriving at 12 Ave S + 128th Street.

Comparatively little collecting but a few good things. Altitude approximately that of San Jose.

Nov. 1. Took the morning train to Tres Rios and followed road past south side of plaza + church turning right after

passing third bridge keeping up Carpintera in a generally SSE direction. At about 146m we took to the southwest potrero at a fork a short distance before a group of *Erythrina* which were losing their leaves and ascended the hill to about 1670m then entered woods circling east + north around the head of the ravine to about 1700m where we came into a clearing above a house apparently the end of the road. We followed the road back to Tres Rios practically that followed in trip of Oct 25.

Saturday Nov. 2. Most of day spent in taking care of specimens catching up correspondence, a trip to bank market + book stores and preparations for a long trip up Irazu.

Nov. 3. Started a little after 8 AM with Mr Iglesias & his brother Manuel? for San Isidro ^{Coronado} via Guadalupe. At San Isidro we witnessed a solemn procession of the Virgen. After reviewing it we arrived at a stable where horses awaited us. Mr. Iglesias' brother went to his farm and we started up the long gentle slope. After a short ride we turned straight down across a brook and then up the slope to San Miguel, then past the Lower Rancho Redondo ^{of Sr. Ros} and up to the Quagabition homestead & dairy of don Bernardo Iglesias R. In the afternoon we inspected barn & meadows and recent flood damage with don Bernardo but took no specimens. Rainy house 2250 m

Nov 4. Slept late woke about 7 sun bright. house 2150 m. Climbed up thru potrero and followed road up ^{one of the} to lecheria

Coloqued. Lac.

of Sr don Alfredo Volio, entering his potrero a short distance to a height of 2350m. Returned a little after 11 AM and worked the rest of the day until 7³⁰ PM without specimens.

Nov 5. Up at 6. Took the road toward the next farm ^{Chino} collecting mostly in the ^{west} potrero below the road until the road reaches the next ^{fence} farm and then above east of road until we ~~re~~ reached a group of fresh charcoal pits at 2400m. House read 2150 when we started, sky cloudy started to rain about 10 AM. Rained hard most of rest of day. House 2200m at 6 PM. Worked at specimens all rest of daylight, no time for water colors. Bed at 9³⁰

Nov 6 Up at 7 after breakfast went south along road toward San Miguel into the next ^{south} potrero where we filled both vascula by 10 AM or a little later. Many good things,

in quantity for the first time. We spent the rest of the day caring for specimens without finishing agarics and ~~all~~ ^{have} driers in use. Rained hard and roof leaks badly so problem of driers is acute. Barometer house 2170 at 8 AM Highest point ^{reached} in potrero 2180. house at 6 PM 2200

Nov. 7. Barometer at house 8 AM 2180 10 30 2220; 4 30, 2220. Since presses were full and Stephen tired, left him to change driers while I collected near road in south potrero and just over the fence on the next farm. ^{1 km. or so. 2 driers to} Got several pyrenomycetes and additional material of some species. Barometer readings varied between 2180 & 2220 m. Spent rest of day in caring for specimens. Began to rain about 2 30.

Nov 8 Barometer at house 11:30 AM 2200; at 430
 2260. Took road to upper farms ^{Chino} begun
 to collect at 2300 and passed thru
 first farm ^{Chino} ~~El Alto~~ ^{Haca} ~~El Alto~~ and into second
 as far as brook at 2650 m. Began to rain
 and as hour was late returned about 11:20
 Got several interesting lichens + agarics
 Had everything in press at 4:30 PM.
 Drizzles + brief intervals of sunshine
 no rain hard enough to make roof leak
 heavy fog much of time Road runs
 approximately East + West most of time

Nov. 9. Barometer at house 7 AM 2220, at 12 M
 2200 at 6 PM 2220 Crossed main brook
 and ploughed field and up in a northerly
 direction to top of ridge dividing from
 next brook system ^{Rancho Redondo} Followed this easterly
 through several potreros following
 abandoned road ^{to about 2600 m.} then southerly across
 burned area to a recently deserted cabin
 on bank of first brook north of main stream
 at this point. Thence over the hill and

down thru bambusoid grass thicket to main brook, up a southerly branch and over a height of land around head of next west southern tributary striking the main road thru the farms at the point ^{Chino} at which we turned back yesterday. This point read 2620 m. instead of 2650 m. Returned to house at 12 m. Pedometer registered 6 miles.

Spent remainder of day in caring for specimens. Ridge just after we turned eastward had several *Russulae* and other quite northern genera of *Agaricaceae*.

Nov 10

Sunday a beautiful day. finished notes on agarics & Stephen changed the presses. otherwise a day of rest.

Nov 11. Crossed ravines southwest of house intending to climb ridge opposite from it

Rancho Redondo
 southeastern slope but found such rich
 collecting on its southeastern spur that we
 spent the rest of the morning there. Collected
 a light brown *Amanita* near a *phalloides*
 but it fell to the floor & Stephen stepped on
 it preventing further studies. Many *Russulae*
Clavaria Tremellodendron, *Gantheria* or
Gymomyces & *Melanogaster* & tiny *Boletus*
 a large *Craterellus* etc. Spent afternoon in
 study and evening on letters for tomorrow's mail
 Don Victor brought up our mail this noon
 and Stephen seems happier.

Nov 12. 6 AM barometer 2220 6 PM - 2250
 Finished notes on fleshy fungi and
 many other small jobs but did not go
 afield today. Weather was beautiful.
 Senora Blanco is sick, ^{Victor} ^{baby born} so we may not
 go to Santa Rosa tomorrow

Nov 13 7 AM barometer 2220. Went out to

Peter of Alfredo Oller

highway followed up to next house thence
 around hill thru potreros to house then
 over hill down across valley and up
 hill to highway which we followed
 upward easterly to house at about 2560
 then down across valley to house ^{Cabeza de Vaca} +
 highway opposite and above house
 of Alto de Cabeza de Vaca. Thence down
 through forest past charcoal pits
 and out to ~~A~~ road down from Alto Chino
 de Cabeza de Vaca thence to house
 country too open for good collecting
 but a few good things including a
Pholista or *Hypodendrum* in quantity.
 afternoon spent on water colors.

Nov 14 Barometer 2220 at 7 AM
 Went with don Victor Blanco the over
 seer to Finca Sta Rosa. The road follows
 the route already familiar up thru Chino
 (El Alto de Cabeza de Vaca) and up
 the steep hill visible at the head of
 the valley just before the continental

divide is crossed a road leads sharply right across to Cartago and a little beyond a small bridle path leads steeply up to finca of Alfredo Volio. The continental divide is crossed at 2800 uncorrected (2770 cor. variation of instrument not weather). Beyond the divide road continues more or less easterly + northerly down headwaters of Rio Ducio to Finca Santa Rosa. The descent follows a shoulder between two streams, in some places very narrow in one place not over 10 ft wide with landslides eachway. The last stretch is good corduroy, the first I have seen here. While don Victor chatted with the farmer, I followed the road toward San Isidro thru the first hill where I found some *Polyporus cinnamomeus* and a curious *Cladoniaceae* lichen whose genus I did not recognize ^{*Heteromyces*}. The road which crossed the brook

just before leaving the corduroy at the mill by the penstock leads steeply up to the potrero de Santa Rosa. Mist was very thick so we did not go up and after a mug of coffee we returned. The journey takes two to $2\frac{1}{2}$ hrs each way, got back about one and after lunch took field notes & painted until dark. In evening noted a complete ring around the moon with all colors red inside violet outside about $3-4^\circ$ radius from moon. Clouds in vicinity of moon by light bright enough to cast strong clear shadow & rest of sky clear & starlight

Nov 15. Rainy & misty most of the day Took care of specimens, sorted and put in naphthalene most of morning afternoon went alone to south potrero and picked up several interesting things

Nov. 16 crossed main ^{Rancho Redondo} brook of valley and followed general route of Nov 9 to top of ridge keeping lower along the ^{second} tributary somewhat east of previous trip. Followed road along top of ridge westerly down to near crossing of main brook then up thru meadow to house. Several interesting finds. Spent afternoon as usual with field notes + water colors. Had headache most of day. 2500 m highest point barometer house 7AM 2220 at 5PM 2250 m. Cloudy + misty most of morning, fair in afternoon.

Nov 17 went to San Isidro Coronado to meet Bertha saw Cora Pavonia at 1800 m. only time on trip. Barometer at house at 6 PM. 2240.

Nov 18 Crossed brook system below house then followed road up main branch into valley behind hill visited Nov. 9 + 16
Rancho Redondo

and shortly before ~~reach~~ reaching
 farmhouse in the valley climbed to the
 top of the hill to the north about 2600 m
 By the time we had reached the top
 the mist prevented all distant views
 Dense thickets of canjiquela ^{Chusquea} on the
 northern slope prevent a good view even
 if the mists were not present. Descend-
 ed to the southwestward into the first
 deep ravine and when about half
 way down over the shoulder and down
 somewhat to the east of the farmhouse
 across the potrero back to the road
 and home house 2200 m at 7 AM + 12 M
 a Lateralnea with only two columns at
 2600 m also the black spored analog
 of Amanita ^{+ a large Psycholopha} a little below. Bertha
 went with us and found the Lateralnea

Nov. 19. Climbed up thru upper potrero of lower farm to the road along the edge of the scarp on the southern edge of Mr Iglesias' holdings to about 2700 m then dropped along a bridge path to the junction with the road to Sta Rosa just above the gate of the ^{El Alto de Cabeza de Vaca} Jagabillos potrero. Bertha took several pictures of general interest. Not very strenuous but Stephen tired out and went to bed as soon as he finished presses and Spanish. Fewer collections but some of great interest.

Nov. 20. Followed road toward Sta Rosa as far as the top of the continental divide then up hill to south to the second hill toward Irasu then down the second ridge from the great northwestern scarp to the end at the confluence of two streams then followed road northerly & westerly past farmhouse ^{Retes?} and up hill until road turns south then across two shallow valleys to road along the great scarp

at the frieze of faces carved in the walls of the road. Then down the road intending to cut down thru the canajuela thicket a short distance to charcoal pits as on Nov. 5 but kept a little too far east dropping very steeply down into ravine and so out across potrero of ^{Chino} Cabeza de Vaca and back to the main farm house. I took a very strenuous climb up rock slide beside of small stream in ^{El Alto de Cabeza de Vaca} Guayabillos potrero above Sta Rosa road about 30 m.

got beautiful red lily and some interesting agarics for my pains. The logst stubs of upper potreros are so dry that not much chance for fungi. Highest point reached 2850 m.

House 2200^m at 8 AM 2240 at 6 PM.

Nov 21. Went into south potrero and down across brook to lower road which we followed down to about this point on Nov. 11 then followed the road down to about 2040 m ^{Rancho Redondo} finding many small agarics hypogaei and Isarias in the mossy banks. We returned partway along the road then climbed one of the hills across the brook arriving in western corner of the southern potrero. Rained most of the time. Barometer at 2200 m at 8 AM and 2240 m at 11³⁰

Nov 22. Returned to San José in the morning

Nov 23-Dec 3 Spent time on collections writing up notes, house hunting etc.

Stephen in bed 1 1/2 days with "flu"

Anne & Bertha with hard colds. Came to Siquines Dec 3. Rained hard all PM. spent time in getting acquainted.

Dec. 4 Accompanied by Mr. Catt we ascended southeast bank of 1st tributary of Rio Siquirres which enters from southeast just above village ^{140 m.} After a short distance we took to bed of tributary then climbed northern bank and went up between this tributary + Rio Siquirres soon striking a trail which we followed to 240 m when the lateness of the hour forced our return. We got back about 11 AM. after lunch worked until six at specimens. Very hard rain during lunch, heavy wind most of afternoon.

Dec 5. Followed trail by which we returned yesterday as far as 400 m. House read 120 m this morning. The trail leads in a southerly or southwesterly direction more or less following Rio Siquirres on its eastern bank. The climb is quite steep after leaving the ~~potres~~ potrero then follows a narrow ridge for a long way. A slender delicately branched

Xylaria on fallen shells of the fruit of *Apeiba aspera*? Aubl. which fruit looks remarkably like some echinoderms.

Dec. 6 Explored trail of two previous days for $4\frac{3}{4}$ miles reaching 500m. Very few specimens taken, but came upon a very curious aroid with much divided leaf probably *Dracontium*. The trail after passing headwaters of east branch of ^{Rio} Diquirres swings eastward toward Pacuare and continues to climb slowly.

Dec. 7. Went thru Diquirres village and followed road along west side of Rio Diquirres for $4\frac{3}{4}$ miles to an elevation of 200m. Corrected barometer which read 140m to 70m in accordance with recorded elevation at the station recent readings probably 70m too high. Road winds along a little above banks of

Rio Siquirres with small cacao, banana + manihot patches. Muddy but pleasant vistas + very gentle slopes. Got a few interesting things mostly on cacao + shade

Dec 8 Took tram line about 1 mile west of Siquirres which runs northeasterly thru Isla de los Chanchos across the Indiana line to Barnstorf. We spent a very enjoyable day with the Danish overseer Mr Stubbe? In the afternoon we took a tram to the forest on this farm. a very short trip yielded several interesting species.

Dec. 9. Took care of collections in morning and collected Termites etc in coconut grove east of laboratory until noon Rev Thornton called immediately after lunch + Mr Kress soon afterwards. After he left we went swimming.

Dec 10. Went down main line of R.R. to bridge over Rio Pacuare. On west bank took an inconspicuous mule trail in a southerly direction along + high above Rio Pacuare to abandoned patch of bananas + cacao, then followed river gravels up as far as cliffs. Here we struck up the hillside until we found an indistinct trail to tiny poorly kept clearing of Sta Rita patch of bananas + sugar cane then up hillside + back to Rose Hill banana + cacao patch near where trail enters it. Much machete work needed and accomplished by Thomas + Catt. Several interesting things. Thomas acquired live tarantula [antelope infamarcan dialect] and two very dead snakes.

Dec 11. Finished taking care of yesterdays collections and botanized potrero of Indiana. In morning took care of specimens in afternoon.

Dec 12. Took tram line west of Siquirres north thru Siquirres North then followed trail west and north thru part of Livingston first thru cassava patch, then cacao out into potrero. We descended to channel between Reventazon + Siquirres and followed it back and up the east bank of Reventazon to RR bridge thence across to La Junta and up old line to cut at 39.5 miles where we found a few things. Calibrated pedometer on way back. Distances may be about 10-15% too large. Afternoon with specimens as usual.

Dec 13. Took freight at 530 for the Tunnels Camp at southern entrance of Tunnel. Followed road toward finca of Arturo Volis now managed

by Gonzalo Volio for some distance westerly until we saw pond on southern side of road. This pond has wide floating grassy margin where we collected many flowering plants

Then we returned to the much larger lake on the northern side of the road. Here the forest reaches the water's edge but with mud between the trees in places. Mostly fungi collected here. Upper pond estimated 430 m lower pond 370. Tunnel Camp R R Station 300 m.

Dec 14-24 returned to San Jose overhauled and identified specimens

Dec 25. Mr Iglesias' for lunch, Valerio called to discuss arrangements for trip.

Dec 26 Took 8 AM train to Sto Domingo where ^{+ Remo Valerio his brother} Valerio met us and provided horses. Took road to San Luis, thence up to farm house (unoccupied) of Dr. Martin Zamora at foot of Cerro Central de Zungui at 1520 m. It rained while we lunched. Ramalina

Theloschistes + *Stereocaulon* were common on roadsides the two former on treefence posts the latter on the banks

After lunch we botanized in potreros to north + east of house to about 1600 m when it rained hard + ^{we} returned. Wind blew continuously from north east sometimes quite violently.

Dec 27. Climbed up past next farm house to Cerro along wooded ridge to 1700 m + returned by trail thru potreros on south slope. Many interesting things but almost too dry for fungi.

After lunch left finca Zamora at 2 PM arriving 8 to Domingo at 4:15 PM took auto to S. Jose about 6 PM.

Dec 28. Worked at field notes on fleshy fungi all day.

Dec 29 to Jan 7. Worked at specimens except Jan 3 when we moved to house of Sr. Rafael Alvarado.

Jan 8, 1930 Took the morning train to El Alto, then over the west side of the former Laguna de Ochomogo where the republican forces were encamped in the famous battle. From the battle cross we followed a little used cart road until it lost itself. We went mostly in potreros over the shoulder to the west of the high bare peak near the railroad, on to the second peak bare to the eastward but wooded to the top on the west side 1740m. Here we ate lunch looking up the valley of Rio Grande. after lunch we descended into the valley visited Oct 25 + Nov 1 along shoulders + abandoned road at gate at head of valley before the road starts zigzag. Returned down this valley road to Tres Rios. Rev. Ralph Brydges A.M. (Columbia) the pastor of the P.E. church of San Jose, went with us. Stephen saw a toucan at about 1600m.

Jan 9. Day spent in preparations for the trip to Guanacaste

Jan 10. Took 9 AM train for Puntarenas while the descent is approximately 4% all the way to the coast, for a long time we went down the gentle slope of the valley of San Jose. Then we began to wind down thru the Rio Grande ~~de~~ cañon. Lunch at Rio Grande de Tarcoles consisted of tortillas and omelette of the flowers of Yucca elephantopus. Met Manuel Valerio on the train. Stayed at Grand Hotel Europa ^{near} ~~next~~ the wharf for lanchas. Went for a swim in the evening \$.50 for bathing suit towel etc.

Jan 11. Rose at 4³⁰ took the lancha at 6 for Bebedero. The boat has to go around the city to avoid shallows before starting toward the mouth of the Tempisque. The islands are very attractive. As we approached the mouth of the river we noted the

limestone formations. Don Anastasio says that the Cerros de Santa Catalina are predominantly limestone which is used for burning in some places. We stopped at El Coyolar + El ^{Escobo} ~~Salto~~. The upper part of the river is narrow but very picturesque. We scraped a bar just below the town as we were a little late and the tide had started out about 30-45 cm. The quartermaster was a very interesting Indian very alert yet talkative. We landed at Bebedero and after stowing our baggage in the truck we went to Siberia by auto. We stopped just beyond the farmhouse at Hacienda Mojica to change tire and I collected some pyrenomycetes. At 100 m near Agua Caliente we stopped again. At Bagaces we stopped for frescos pinolis taste (a drink of parched corn cocoa and water + sugar, stirred by a molinillo). It was served in jícaras, a cup carved from the fruit of the jícara which is borne on mature wood as are the cacao pods.

The poblacion seems pure indian, dishes mostly of vegetable origin i.e. gourds, jicaras etc. The tables in the kitchen have hollows to set rounded bottoms in, ~~and~~ carvings very good. House of adobe and heavy lattice construction. Furniture slightly heavy but very artistic in design. Seats loosely woven of thongs or sheets of leather with hair side down. Parlor furniture imported from San José.

The road mostly unfenced crosses the plain in more or less straight lines with bridges over the streams but no traces of pavement. The country has a somewhat xerophytic appearance, rock often near surface of soft white fine grained sandstone.

Jan 12. A day of rest visits etc.

Jan 13. ^{Dr.} Don Oton Jimenez Luthimer went to La Cruz this morning. We went to Dobrado's house shortly after breakfast where we were

were joined by Sidon Anastasio Alfaro
 and his grandson Carlosito Herrera Alfaro. We followed
 Ave Central to the church the across an open
 field to the campo de jagar and northeasterly along
 the general line of the Rio Liberia and the
carretera to Deep brook? where the carretera crosses
 it and returned. Photographed Acacia
cornigera? and a bright red flower.
 Very few mosses, fruticose or foliose lichens
Delaginellas all dead, soil very dry & hard.
 Landscape similar to R.I. or Plymouth Mass.
 in fall as leaves are beginning to fall. Thelophor-
aceae, Polyporaceae, leaf fungi and crustose
 lichens abundant.

Jan. 14 Went with Carlos Herrera A.
 along road to Santa Maria. Passed swim-
 ming hole and tree with several howler
 monkeys, crossed stream passed a little
 beyond Finca La Careta and turned
 north on a little traveled road.
 after following this we returned to main

road and followed it a little farther
 Found a stalked puff ball and miscellaneous
 other things.

Jan 15 Followed the Rio Liberia about 5 km
 to southwest of Liberia. It flows in a chan-
 nel of soft ^{white} sandstone with potholes, and
 deep inviting swimming pools and wash
 tubs. The banks have a few dried Selagin-
 ellas and hepaticae, while the water
 contains a short sterile aquatic
 moss. Searched carefully for Podostem-
 onaceae but found none. From the
 top of the bank the land is level
 nearly as far as the eye can see.

La Vieja Santa Maria & Miravalles
 were completely visible.

Jan 16. Followed Bagaces road to fork
 south of city then turned along ~~the~~ western
 fork a few hundred yards. Returned to
 Liberia in time to take care of specimens

before lunch. After siesta took horses
 and rode to Hacienda Santa Maria the
 property of sons of Federico Sobrado
 usually occupied by Antonio Sobrado.
 The party consisted of Oton + Matilda
 Jimenez L, Dra. Isabel ^{Alfaro} de Herrera and
 son Carlos Herrera. Alfaro and ourselves.
 The road follows the height of land between
 Rio Siberia + next to northwest? Near Siberia
 The land is very dry rolling with little
 hills and sparsely covered with trees
 at times canons with ~~trees~~ steep sides
 and interesting talus are seen on the
 northwest. As the higher elevations are
 reached the grass is closer and greener
 the landscape looks less dusty. The
 sunset was gorgeous. The last hour
 was after dark. 4 hrs from Siberia
 We ate our evening meal and immediately
 went to bed. House is 320m above sea
 level.

Jan 17. Ascended hill back of house
 720 - 850 m and returned thru abandoned
 cafetal and cafetal. The woods are thick
 but not difficult going, quite moist still
 Too dark for ~~epo~~ lichens, epiphytes not
 abundant except on a few large old trees
 Hymenochaete + polypores abundant.
 Stephen, ~~Earlito~~, + Manuelito went for a
 ride to an agufal immediately after
 lunch. After siesta + tiste everyone
~~so~~ went to visit the source of the
 Rio Siberia? where it gushes from a
 steep hillside as a fully formed
 brook, a portion of the stream is
 led along the hillside to the house.
 Black flies (mosquitos) were very bad and
 Bertha + I returned before the others.

Jan 18. We followed a small herd of
 steers which were driven to Las Delicias
 for bathing against ticks. While Bertha
 secured pictures of the process, Stephen

and I visited a small gorge north of the house and went over to the edge of the cañon but as its sides very very steep we did not attempt to descend into it.

House at Las Delicias is 420 m. Collecting probably 380-400 m but no readings taken. We returned for lunch at 1³⁰ P.M. A hard cold has been developing since we left Liberia so I stayed in bed the rest of the day. Stephen has been improving his time with ~~the~~ Señorita Matilda Jimenez in Spanish conversation.

Jan. 19. Cold little better. all but Bertha & I returned to Liberia, Stephen to bring up driers Monday. I stayed in bed until lunch.

Jan 20. Cold somewhat better. Rained hard until late afternoon shortly before Stephen arrived Put away collections of 17th + 18th.

Jan 21. Rainy morning. Finished caring for specimens. Stephen started alone for more before it stopped raining mostly in potreros below platanal. Brought ~~it~~ back a large collection. Bertha + I collected coffee diseases and lichens in cafetal. We put away specimens after lunch then went for a walk in woods near fuente de Rio Liberia in late afternoon with Pablito. got crustose lichens and a few interesting things in other groups. Saw a Septoria too old + distorted to collect. As weather has cleared barometer has fallen until house at 5PM reads 780 instead of 720 as earlier while it was raining still more or less windy.

Jan 22. Very rainy morning. Stephen went out alone, got some things and killed a snake. I helped him skin the snake then Bertha + I went for a walk in the potrero.

Jan 23. Still rainy this morning but Stephen, Bertha & I went up the hill. north of the brook by the house, climbing a long gentle slope thru more or less open woods to about 920 m [House 720 m] we kept a little too far north and came out just above the sulphur springs and skirted along the edge of the jungle for some distance

Jan 24 Rained all forenoon. Changed presses in afternoon and went to forest southeast of house for about three hours. Trees mostly small, growth thick branches mostly on one side due to prevailing winds. Best lichens on trees in shallow ravines altho fruticose lichens absent and foliose closely appressed. altitude 680 m.

Jan. 25. Changed presses and wrote during the morning. Stephen spent the afternoon in the potreros south to southwest of the house. Bertha & I collected along the Rio Siberia from bridges about 680 m to about 640 m. Got many interesting lichens and a tiny yellow flower with scale leaves in a boggy place near the brook. ^{Whitularia} ~~Bromelia~~?

Jan 26 Very rainy all day. Prepared specimens for return to Siberia

Jan 27. Returned to Siberia, lost hat, face sunburned.

Jan 28 answered some 20 letters Fiestas opened with fireworks, parade of bulls, etc Coronation of queens in evening

Jan 29 Futbol game in morning, bull riding in afternoon, dance in the evening

Jan 30. Wrote letters in morning bull riding in afternoon

Jan 31. Cared for specimens in morning after lunch prepared baggage for trip to

Hacienda Tempisque. Don Oton Jimenez S. willfully violated for every able bodied man to appear on horseback for the parade of the bulls and in the streets shortly thereafter.

He paid the fine willingly thru dona Sofia de Guillen but lost prestige thereby. As the camion drove up to the hotel it met a second party of horsemen and bumped into a horse. The chofer abandoned the camion, a drunk with a horsewhip started for Oton when the police appeared and calmed further demonstrations. Oton was badly frightened, the women quiet and a friend left his horse drove around to the ~~q~~ cuartel explained to the police and started for the western gate, then refused to go further. Sr don Rafael Rivera was hailed and drove off at a breakneck speed for several miles until we left behind a hostile group of horsemen who started to pursue us. The quick thinking of the men who drove the camion the skill of don Rafael in handling the camion over the rough road, the efficient police

the stolidity of the guanacastecos prevented a serious delay at least. I hate to think what a group of cultured American college men without alcohol might have done to Oton in similar circumstances.

The road descends the Guanacaste plain were gently to the Tempisque river and follows the west bank to a short distance below Palmira. We halted ^{in El Paso} opposite the farm descended to the River where a group of peons were ferrying sugar across from oxcart to oxcart in bongos. Most of the men wore very ragged trousers which had been cut off about half way between groin & knee and those completely naked hid their genitalia below the side of the boat until one of their number could ^{wade} across and return with some shirt which they used for aprons or breech cloths. Apparently the men & boys work frequently with only the short trousers for when they were swimming as nature their buttocks and upper thighs were so much lighter than the rest

of their bodies that unless one saw the black pubic hair one would think they had thin white or pink bathing trunks on.

We crossed with Olon in the attitude of the famous picture of Washington crossing the Delaware. I arrived without further incident.

Feb 1 We visited the sugar factory, the plantation of cone for cuttings and spent the rest of the morning discussing agricultural problems. The ... along the Rio Tempisque. In the afternoon Stephen and I collected down river on the west bank but found little. Men ^{+boys} were bathing en naturel in all the deeper places. The physiques were splendid. In fact the Guanacastecos are uniformly much better developed physically than ⁱⁿ any other part of Costa Rica which I have seen. Malnutrition not seen except in children of A.D. While enlarged thyroids are general in C.R. symptoms of thyroid disturbance are rare. Two or three cases of hypothyroidism observed in Siberia.

Owing to the necessity for riding the men rich and poor have powerful bodies but a tendency to bowed legs, while on the meseta the poor are undernourished and the rich overnourished and ^{appear} aged by excessive venery.

Feb 2. Rested in forenoon returned to Siberia in afternoon. We had a flat tire ^{a little} just after we left Buenos Aires so I had a chance to collect some crustose lichens and to enjoy a drink from a bejuco de agua. Shortly ~~after~~ afterward while crossing the Llano Grande ~~don~~ Antonio Sobrado caught a medium sized armadillo for Stephen. The farm where the road crosses the Rio Siberia is Sta Ana (pronounced Sant'ana). Oton gave the young blades a piece of his mind after supper calling them immoral savages etc. which did not raise him in their esteem nor ours.

Feb 3. Oton left for Nicoya early this morning. I took care of specimens and Stephen worked at his iguana skin. Arranged to have

boxes made to ship specimens

Feb 4. Went southwest along river this morning. Afternoon spent at potholes just below first bridge west of city gate on road to Buenos Aires Got many interesting ~~a~~quatics (algae + insects).

Feb 5. Followed road north of Siberia past cemetery to first stream which was dry. Followed this westward for some distance and returned. Stephen got some bats. Country very dry and dusty little botanical material available.

Feb 6. Stayed around hotel much of day expecting to go north to look at coffee diseases but man who was to take me did not show up. Stephen worked at catching bats. Decided to leave Siberia Saturday in man does not come tomorrow

Feb 7 visited locality of Feb 5. Bertha took film of young zopilotes. I got a few more

crustose lichens. Packed in afternoon

Feb. 8. Took camión to Bebebedero leaving Liberia at 4. Bertha returned to San José Stephen & I took camión to Las Cañas arriving about 12 ³⁰ PM. Stayed at hotel of Rafael (Cabito) Briceno. Overhauled baggage after long siesta

Feb 9. Collected northeast of Las Cañas along road to Tilaran in morning. Read in afternoon and evening prayer after dinner. Went to bed early

Feb 10. Left Las Cañas 8 ³⁰ arrived in Sibano about 11 then a little south of gold mine turned sharply uphill to finca of Robert ~~Hankel~~^{Hancock}, a descendant of Pennsylvania Dutch family who moved to South Carolina as P.E. ministers. Father purchasing agent of Confederacy in Germany, settled in England after the

Rebellion, married an English wife. Our host
 spent 4 years in Santa Fe and Tucuman
 Argentina as a railroad engineer 1884-88,
 since then practised his profession in
 Costa Rica, having surveyed much between
 Tenorio + Miramar. Settled present finca
 (principally coffee some sugarcane and
 a little rice) about 13 years ago. Finca lies
 between Rio Las Canoas + R. San José with
 Cerro de San José to South and Cerro Pelado
 visible at the north west. Coffee grown by
 st cleaning underbrush + slowly thinning
 some of natural shade. Wind strain too
 great to grow coffee without mature shade.
 and Guinea grass grows too rapidly to allow
 reforestation without ~~some~~ ^{much} cultivation. Lacks
 proper beneficio for preparation of coffee
 for export and bottom has fallen out of
 local market so price is only half of which
 what it was last year, and so there will be
 a deficit instead of profit. Coffee seedlings
 grown very close in forest to save cultiva

tion + cleaning. Plantation quite free from disease, but some killed by gophers, a few by aphids about collar as at Tejivalle. In spite of fairly dense shade very little Stilbells.

Date palms produce suckers but seem to have mottled leaves (scale or Graphiola?) and have not flowered much yet. Rosaceous fruits have mostly been killed by insects. Our host knows trees very well, many by native names.

The landscapes remind me very strongly of scenes in the upper part of the Black River valley in Vermont in late May.

Spent afternoon in rapid survey of cafetal. Found mushroom in much decayed bagasse + soil back of trapiche. Farm called La Granadilla.

Feb 11. Took care of specimens in morning. I climbed the hill south of house then worked south easterly, coming out into potreros east of house + returned in time for lunch. Stephen botanized cañal to northwest of house, returning a little later. We took care of specimens

during heat of day just after lunch. In afternoon spent some time on huge fallen tree on edge of yucal not far from cafetal. Picked up a few specimens in cafetal

Feb 12 Worked in jungle between cafetal + Rio Las Cañas in morning. In afternoon botanized southwest slope of Rio San José

Feb 13 descended into upper part of cañon of Rio San José on northern bank. found a fallen ~~tree~~ ^{pochote (Bombacopsis)} ~~tree~~ having several species of orchids + many crustose lichens I had fallen too recently to have fungi

Feb 14 Took pictures + collected in cafetal in morning. ^{In the afternoon} Stephen went to next farm south east then ^{north} up to edge of R Canas followed jungle west for some distance. I discussed various engineering + economic topics with Mr Hankel, corrected map changed drivers + prepared bundle of dry specimens to

send to Las Cañas. Planned ascent of Cerro de San José.

Feb 15. Climbed Cerro de San José (de Sibano) Started about eight being joined by the neighbor next above on R San José, Constantino Medrano. Cerro de San José lies S 30 E and ~~463~~ 4350 m away. My barometer read 960 m that of Mr Haeckel 3380 ft. My reading of the house checks quite closely with the observed angle to the ~~top~~ of the Cerro.

We climbed a ravine near Medrano's house to south west bank of R. Las Cañas (or rather the long scarplike wall separating the R. Las Cañas from the R. San José.) We followed this ridge up to the last steep grade through a very interesting forest where we saw many flowers not ~~noticed~~ previously. The steep slope is grass land probably the result of a grass fire sweeping up the s.e. slope. ^{Most} ~~Some~~ of the grass had been burned this season.

but a few lichens, orchids and one legume were found in the crevices of the rock in the unburned area. The rock is

weathering as if stratified with the dip S 70 W slope 40° . therefore the eastern slope is even steeper than the western which follows approximately the dip of the strata. we did not visit the lower peak.

This ^{main} peak about on a level with the cordillera opposite commands a view from Puntarenas to the Nicaraguan border and west to the coast range on the Pacific

Feb 16. Left La granadilla about 10 climbed ^{about 600 m} to edge of R. Canas along ^{near} Hancro's ^{south} easterly line ^{to} then descended by steep zigzag to R. Las Cañas 350 m then up other bank by gentler slopes to 660 m then across undulating plateau past Quebrada Grande then down into a deep valley across more hills into the valley of Quebrada Aguda where is located the Hacienda Sombardia

of Sr don Alberto Fait. Thence up the hill to the plateau where Tulaián is located at 470 m. 500 m

Feb 17. Descended N 70 W into the valley to 340-360 m on the finca de Calderón and found several interesting things. Spent all afternoon changing driers & putting things into press. Wind high but sunny.

Feb 18. High wind and rain in early morning. Much difficulty in getting horses as we had planned to go to Buena Vista with relative of Fait in Lombardia. Sr don Antonio Gutierrez came up like a *deus ex machina* and solved the difficulty by taking ~~us~~ ^{H.} us to ~~Quebrada~~ ^{west} ~~Quebrada~~ Azul to the north of the town. After lunch a peon accompanied us to the forests about N 10 W of Cerro San José altitude 500-600 m. Farmhouse about 400 m on lower slopes of Tenorio not far from Continental divide.

Returned to Tilarán about 4³⁰ and got our driers partly dried.

Feb ¹⁹~~20~~. Presses full and needed attention all morning I followed road north of village toward Quebrada Azul as far as first large brook, which I followed to swimming hole at head of gorge and botanized woods on north side. Stephen went out later when driers were done and worked toward hill southwest of village.

Feb 20. Attended to presses in forenoon after lunch took road leading north east from Tilarán crossing continental divide at 690 m. Just before the divide was reached lichens became larger + better fruited. We descended Atlantic slope to first large brook which crosses the road at 650 m. Returned + cared for specimens. Watched *don't* *Ninfa* garrote get honey.

from her hives. The hollow log containing the stingless honey bees was placed on the table the large irregular black combs punctured and the contents allowed to flow into container.

Feb 21 Returned to Las Cañas, prepared baggage for shipment. In evening met Sr don Gutierrez, the propietario of the botica + Monseñor Luis Suitpold a german priest who has been in Cañas 30 years + in Costa Rica 33.

Feb 22. Cannon to Bebedero. Met don Luis Ariasson of Arias (Imprenta Elsinia. Also Mr Nils Claussen of La Mil Flor in San José and Herr Kleefeld a collector of live birds mammals + reptiles for zoological gardens.

Feb 23. Left for Puntarenas at midnight
 arriving about 5 AM. Took a walk along
 north shore & watched sunrise. On train
 met Mr & Mrs Coleman of Sto Domingo
 de Sta Barbara with a finca on the north
 slope of Barba and had a very interesting
 conversation also Sr don Eduardo Fernandez
 proprietor of the grocery La India

Feb 24 Worked at Income Tax & correspondence
 called on Mr Neumann in evening

Feb 25-28 worked at specimens etc

Mar 1. Took 9 AM train for El Radio to
 call on Mr. Lankester at Las Conchas.
 Had a pleasant visit and walked back
 to Cartago for the 15²⁵ train to San José
 Picked up some interesting fruticose
 lichens on my way back. Stephen
 worked at specimens

March 3 Took 11 AM train to Cartago to home of Philip Byrd whence we departed for the finca of Robert at about 2700 m on south eastern slope of Irazu.

We arrived at 6 PM and were given permission to sleep in the silo

March 4 After a warm stuffy night we started about 4³⁰ for the crater.

The heavy dew on the subalpine vegetation along with the gnarled trunks made every ghastly appearance. Most of the plants are increasingly covered with dust as the crater is approached. Lichens disappear completely at about 2900 and are very rare and depauperate down to 2800 or less.

March 5-8 Days spent in sorting and studying specimens

Mar 9-11. Finished specimens.

March 12. Took morning train to Cartago walked slightly east of south to Agua Caliente and around up hill in same general direction to a point 1460 m. Agua Caliente about 1240 m. Returned in time for 3:10 PM train *Usnea Ramalina*, *Anaptychia* abundant and several *cladonias* on roadside south of Aguacaliente.

March 13-15 Packed boxes for shipment made calls etc.

March 17. Took caboose of 6:30 freight to Turrucare walked north up over rise and descended to R. Siquiñares ^{at 540 m} botanized on north slope to 600 m. The guana-caste was abundant and conspicuous. Returned on the 1 PM train from Puntarenas. Country very dry.

March 18 Shipped specimens and Stephen's baggage.

March 19. Morning train to Simon
Called on Hendricksons in late P.M.

March 20. Collected algae on first
point ^{Punta} toward moir from Unfrutco
hospital. ^{coral reef} Spent afternoon + evening
caring for them.

March 21 Worked at algae in morning
visited cacao drying plant and collect-
ed a few things washed ashore on the
sandy beach south of mouth of Simon
river

March 22 Visited ~~Dr.~~ Dr. Salisbury and
discussed punta + mosaic foot. Thomas
went to Zent and sailed later on El Toloa
Bertha + I returned to San Jose.

Mar 23 Sunday attended church + later
opening of art exhibition.

March 24, 25 Cared for & sorted algae
made a few calls. Anne has attack
of indigestion

March 26. Took 9 A.M. train to Sigües
with Mr. Nevermann, changed to Cairo
branch which descends along the
Rio Reventazon to Golden Grove. Here we
took tramway to Castilla farm
which Mr. Nevermann manages. Walked
north into bananas along river and
returned about 5 P.M. House situated on w.
bank of Reventazon.

March 27 Spent forenoon in jungle
west of house in Castilla and afternoon
in caring for specimens. In evening
finished field notes on agaricaceae
and worked on insects.

March 28. Spent forenoon in jungle west of tramline in Soo Negritos the next farm south of Castilla and afternoon in caring for specimens saw beautiful *Hiatula* with ring suffered from "red bugs" a tiny scarlet which irritates skin at roots of hairs.

Mar 29 after breakfast took tram to point opposite house at Hamburg crossing Rio Reventazon in canoa. Later went by tram to Carmen commissary took train to ^{Estagras Jaracas} where got two bottles algae end of line and took another tram to Manta farm where I collected in jungle back of house before lunch and in banana patch afterward. Returned as we went except walked where we had ridden before ^{train}. Spent evening papering *epidoptera* etc.

Mar 30. For trip of Bertha W Dodge to Volcan Poas see p. 85 this volume

Mar 30 Spent day in caring for specimens drying driers etc. At dusk we started for jungle on trail used Mar 27. We wore headlights and carried two mantle gasoline lantern which we hung up in a suitable place in the jungle. We then followed the trail collecting insects for some distance. Cockroaches abundant Orthoptera quite so, some beetles, numerous individuals of one or two species of wasps especially at the light, small luminous spiders and large prowling ones with the forelegs much different from the others legs. The prowling leaf like Orthoptera apparently make little use of their form for hiding at night. Pachytetes yielded four species, all heavily infected with large Laboulbeniaceae. They apparently hide in soil a foot of trees during day and crawl up at night being low in early evening and high later on.

Mar 31. Went to Hamburg Farm, by same route as on Mar 29. collected in young bananal edge of jungle in forenoon had a good look at a small Central American bear and got some insects.

In afternoon collected in jungle ~~on~~ ridge near house in general direction of Cadiz farm. Rich log which yielded the curious *Callirhipis brasiliensis* in larva, pupa and adults of both sexes. The males have curious long whisker like antennae which they carry under them in their long tunnels in the hard wood and when resting when walking outside they spread and extend them before. We also found small *Paralus* and larva in rotten portion of log.

Got a few lichens in vicinity of house. Saw several species of *Vanilla* in bloom in corner of bananal between Cadiz + Hamburg Evening in caring for insect collection

April 1. Raining all day. cared for specimens sorted insects and caught up journal

April 2. Finished caring for specimens in morning, had early lunch, and took a big circle in the palm swamp between Rio Parusmina + R. Reventazon on Castilla farm. got several agarics etc on decayed palm fronds and collected a few other things.

In evening collected over ground of Mar 30 searching for *Pachytelus* spp. which are heavily infested with *Saboulbeniaceae*. Cockroaches were rarer. crickets more abundant. Mr Neumann got a very curious grasshopper with markings suggesting *Dicherus*, also single individuals of 3 very rare longicorns.

Apr. 3 Rain in morning. Spent day caring for specimens. Evening visited recent clearing of small swamp near main tram line in Los Negritos. Mostly *Cecropia*. Got a few small things and *Brenthus* sp. As the light attracts practically nothing but *Anomala* (?) *brunneata* we moved it to clearing near edge of jungle on trail visited Mar 28. No *Pachyteles* but a few showy longicorns and many individuals of a few Orthoptera, as well as smaller things got a few lichens and a red-flowered *Theobroma*.

Returned about 11 P.M. Trails less well defined & as they were cleared for taking out logs hence very difficult to follow and some of the interesting portions of the trail were not feasible

April 4. Sunny. Dried driers + papered insects
 in early morning then took mule car
 to point about opposite Cadiz dwelling
 struck into hills (20 m high \pm) along trail
 leaving tram $\frac{2}{3}$ way between Cadiz +
 Hamburg but along west bank of Rio
 Reventazon. Circled for two hours to
 northeastward, coming out along lagoon
 a little below Hamburg. Struck in
 again on south side of same hill and
 came out in another two hours about
 opposite Cadiz dwelling where we
 took tram back to Castilla. Spent
 rest of day + evening caring for
 specimens + packing in order to
 get early start for Waldeck. Fern
 like grass chase

conspicuous, a few tiny agarics and
 very few lichens. Nanosella 270 μ long
 70 μ wide (smallest beetle known) very
 abundant on *Polystictus haedinus*?
 larvae, copulating pairs etc. Beetles, few
 + not striking.

Apr 5. Collected where Monte Cristo train meets railroad and against in cacao groves opposite Carmen commissary arrived at Waldeck in afternoon on local train.

April 6 Collected where Waldeck tram line crosses Rio Madre de Dios mostly in thicket of cana brava then went to virgin forest at northeast portion of farm got many interesting things which took to 10³⁰ ^{pm} to care for. Neumann took evening trip to cacao grove April 7. Overhauled press, collected along north bank of Rio Madre de Dios west of main train bridge mostly in cana brava. Spent rest of morning on recently felled tree in partially cleared forest.

In the evening returned to same locality. Beetles abundant also large black hemipteron other groups rare very few roaches & crickets. Caught a *Psephenus barbrostris* on dicot leaves apparently resting as it was very sluggish & different from movements of this species during the day. *Brentididae* & longicorn abundant

Apr 8. Returned to end of tram line at bridge over Cimarrones river and followed edge of underbrushed area (approximately straight west) to bananas at Laguna on Monte Verde farm following east bank of laguna southward for about an hour and a quarter over fire cleared trail. collected many specimens of several species of *Euproctis*, one of the segregate *Eumacris*. Found several conspicuous beetles and a few *Euproctis*

April 8. visited locality of last night. noted *Actinodes* chiefly *Actinodes* feeding on crustose lichens confirming observation of yesterday when a similar but forested I could not catch was feeding on sterile white margined lichen. Set machete near where made above observation at end of train line. Reached home at three, lunched and wrote a garic field note until 9:30

April 9. Returned to San Jose, visiting Mr Catt at the Squirrels Experiment Station between trains

April 10 Overhauled presses and sorted specimens

April 11 Spent day in catching up correspondence

April 12, 14-18 in San Jose

March 29 - Took train from San José
to Alajuela and camion from
Alajuela to San Rafael de Poas.
Worked about a mile from end of camion
line to house of Miss Vargas' cousin's
husband, Juan Barrantes.
Slept there.

March 30. Arose at 1:30 A.M.
- breakfasted - started from finca
before three. Rode for over two
hours in the dark, arriving
at Lecheria at dawn. Continued
up arriving at "Hotel" on the
potrero del Volcan at about ~~six~~^{seven}
thirty. This potrero is obviously the
filled in floor of an extinct crater as
it is a level circular spot
surrounded on all sides by a wooded
rim. ^{There were large frost crystals there in the early morning} We arrived at Crater rim
at seven o'clock. Vegetation
extends to the very rim - trees
practically all the way from Lecheria
up. The bottom of the crater

may be seen quite clearly from the rim (when there are no clouds): ~~Boiling~~ steaming sulphur makes a splendid sight.

The lagoon is only a short distance away, perhaps ten minutes' walk.

Collected ~~around~~ ^{near} lagoon and from crater's rim down to lechénia. Walked all the way as my refractory steed had refused to go all the way up and had been tethered a short way above the lechénia.

Many lichens - chiefly cladonia. The upper levels are quite moist, even at this season. Some fungi.

Arrived back at San Rafael at about one o'clock.

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vert angle to high peak 5340

max field 42 bu of maize

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